TASK: P752968

WK PKG: PR ET-093-TS-0009
ENG GRP: ETM
TSK LDR:

FLOC: VAB
MLOC: ET-93
STS/FLT: 107 /001

TITLE: SUSPECTED AREAS (1 EACH +Y AND -Y) OF LOW FOAM ON THE ET/SRB FITTING

Rev'd 199

OPERATIONS LIST

NUMBER TaskBarCode	TITLE	OperationBarCode	DEPT/SHOP
10	SUSPECTED AREAS (1 EACH +Y AND -Y) OF LOW FOAM ON THE ET/SRB FITTING		
20	SUSPECTED AREAS (1 EACH +Y AND -Y) OF LOW FOAM ON THE ET/SRB FITTING		53700 SCH

SUSPECTED AREAS OF LOW FOAM ON ET/SRB FITTING CLOSEOUT

Element/End Item: **ET-093**
Flow/Usage: **107**
Facility: **VAB**
Design Center Concurrence: **MSFC**
Category:
OPR: **ETM**
TTL ORG: **SE**

N/A

This document does not contain hazardous operations.

P752968

National Aeronautics and Space Administration

John F. Kennedy Space Center

1. Report Number
- [ ] INTERIM PROBLEM REPORT
- [x] PROBLEM REPORT
- [ ] DISCREPANCY REPORT

PV-6-389 224

2. Detected During	3. Work Area/Location/Zone	4. End Item Control Number
VISUAL	D2 LEVEL HB1 VAB	ET-093-TS- 0009

5. Part/Program Name	6. Part/Program Number	7. Seq#/Rev No
ET/SRB FITTING CLOSE OUT	80971018422-500	N/A

8. NHA Part Number	9. STS/Eff	10. Reported by	11. Date/Time
80901005000-030	107 T 093	LYNN SEELOS AST ZQ6712 VAB OPS 1-1198	08/08/02 1900

12. Item	13. Problem Description
1	Suspected areas (1 each +Y and -Y) of low foam on the ET/SRB fitting closeout.

TPS/RSI Instl d: [ ] Yes [ ] No C/P Instl'd: [ ] Yes [ ] No C/P Part Number:

14. Process Escape	15. Constraints	16. Crit	17. Eng Grp	18. MR Reqd	19. Out of Family
[ ] Yes [X] No	A5214.002 See CRR [ ] To: ~~T1297.002 RUN 3 & 4~~	H/W 1 F/M 3	ETM	[X] Yes [ ] No ITEMS: 1.0	[X] Yes [ ] No ITEMS: 1.0

20. Item	21. Disposition/Cause/Corrective Action	22. Tech	Contr	Govt
	USA VM 141			
	USA VM 032 SEE UTOP FOR DISP			
	OE 188 JPC 8/23/02			

23. Data Code	24. Final Acceptance Date
T 0 9 4 M 9 - 9 1 6 1/7/03 USA VM 079	DEC 11 02

25. RG Action Reqd	26. Related Reports
[X] Yes [ ] No ITEMS:	UTOP CHANGE INDEX USA VM 081 JAN 14 2003

KSC FORM 2-152 (REV. 6/01)

ORIGINAL

USA

081

08-09-2002 13:[illegible] **Official** PR #: 095-US-0009

Approval Record

SUSPECTED AREAS OF LOW FOAM ON ET/SRB FITTING CLOSEOUT

Technical Contact: W. Richards **Phone:** 1-3420

Category II TOP Only

This Approval Record is for all Operation No(s) listed below:

Initial Released Operations: 10

Added Operations:

Deleted Operations:

Replaced Operations:

Change Index Added WC 108 USA 8-23-02

Comments:

Check Family Type: In Family[ ] Out of Family[X] NMA[ ]

Organization	Name (Printed)	Name (Signature)	Date
ETM	W Richards	[signature]	8-9-02
SE Check	Mark Wollam	[signature] ME 10	8-12-02
NASA SE	Robert F. SPERCE	[signature] #42	8-12-02
LM ET-LSS	Scott Otto	[signature]	8-12-02

WC
106
USA
8-23-02

8/19/02 02:06:[illegible] PM Official PR [illegible] 093-TS-0009

Approval Record

SUSPECTED AREAS OF LOW FOAM ON ET/SRB FITTING CLOSEOUT

Technical Contact: W. Richards **Phone:** 1-3420

Category II TOP Only

This Approval Record is for all Operation No(s) listed below:

Initial Released Operations: 10

Added Operations: 20 30

Deleted Operations:

Replaced Operations:

Change Index Added

Comments:

Check Family Type: In Family[ ] Out of Family[X] NMA[ ]

Organization	Name (Printed)	Name (Signature)	Date
ETM	Richards	[signature]	8-19-02
SE Check	Tom Ford	[signature]	8.19.02
NASA SE	J. RIVERA	[signature]	8-19-02
LM ET-LSS	D.M. Powell	[signature]	8/19/02

The following signatures are for the MR disposition only.

Organization	Name (Printed)	Name (Signature)	Date
OPR-MR	JOHN BURKE		8-19-02
NASA-SE	J. RIVERA		8-19-02
ET-LSS	D.M. Powers		8/19/02
MFSC-RO	John Key	John Key *	8/23/02
QE	DAVID W. HOPE	David W. Hope QE 188	8/23/02

* FOR FRED KIENITZ

12-6-02

12/5/02 05:53:38 PM Official PR ET-093-TS-0009

Approval Record

SUSPECTED AREAS OF LOW FOAM ON ET/SRB FITTING CLOSEOUT

Technical Contact: W. Richards **Phone:** 1-3420

Category II TOP Only

This Approval Record is for all Operation No(s) listed below:

Initial Released Operations: 10

Added Operations: 20, 30, 40

Deleted Operations:

Replaced Operations:

Change Index Added

Comments:

Check Family Type: In Family[X] Out of Family[ ] NMA[ ]

Organization	Name (Printed)	Name (Signature)	Date
ETM	W Richards	[signature]	12-5-02
SE Check	Tom Ford	Tom Ford	12.6.02

USA
United Space Alliance

UTOP Change Index

WAD: PR-ET-093-TS-0009

TE/TIME OF RELEASE	DATE	STAMP	REMARKS
8/19/02 12:05:15 pm	8-23-02	WC 108 USA	OPERATION 20, 30 ADDED
12/5/02, 05:53:38 pm	12-6-02	WC 091 USA	op 40 added.

DEC 11 02

Table of Contents:

List of Contents

1.0 INFORMATION

1.3 Operations List

Operation		Shop/ Cntl Rm Console	OPR	Haz (Y/N)	Duration (Hrs)
No.	Title				
10	Defect mapping	ET/ N/A	ETM	N	1.0
20	Electrical support bracket installation	ET/ N/A	ETM	N	1.0
30	MRB	ET/ NONE	ETM	N	1.0
40	Summary/ Closure	ET/ NONE	ETM	N	1.0

2.0 SAFETY INFORMATION

2.4 Reference Safety Documentation

Number	Rev	Title
KHB 1710.2	LI	KSC Safety Practices Handbook
GSOP 5400	LI	Ground Safety Operating Procedure

3.0 STAGING REQUIREMENTS

3.2 Parts, Materials, Equipment, and Special Tools

3.2.5 Shop Support Materials

OPERATION 10

Part No./Find No.	Nomenclature	Qty	Unit
528-43030-1	lumocolor black pen	1	EA

4.0 PLANNING REQUIREMENTS

OIR Required Yes [ ], No [X]

Predecessors:
None
Successors:
None
Configuration Required:
None

5.0 CONFIGURATION ACCOUNTING AND VERIFICATION

OPERATION 10 Defect mapping

Shop: **ET**
Cntrl Rm Console: **N/A**
OPR: **ETM**
Zone: **N/A**
Hazard (Y/N): **N**
Duration (Hrs): **1.0**

Remove P78-3123 Cable brackets

10-1

IF Cables clipped to P78-3123 brackets — **Verify**

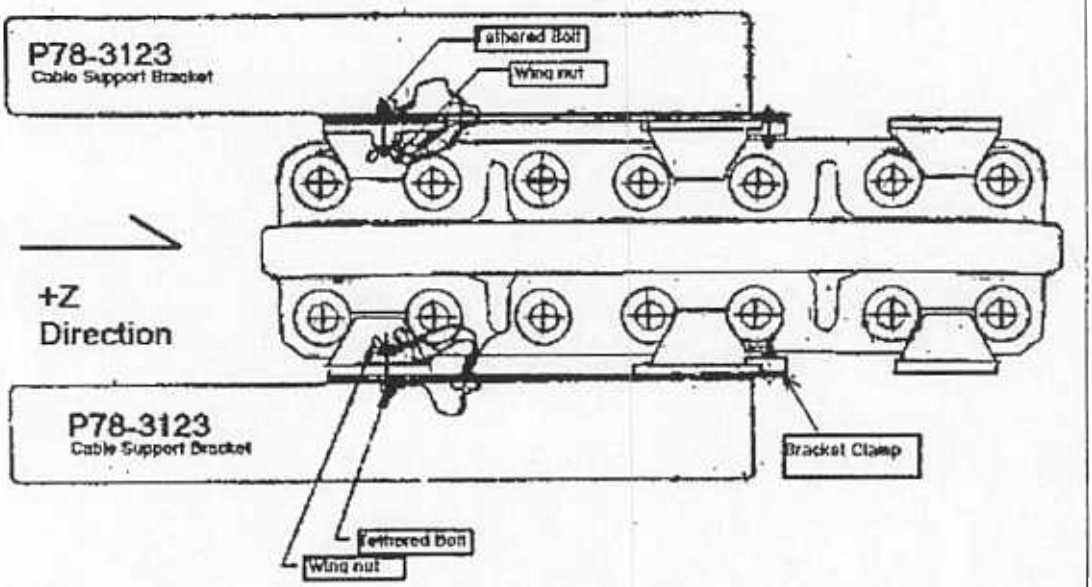
THEN **Remove** tie wraps supporting cables. ☑

Secure cables to EB fitting using J414 tape or tie wraps.

ELSE **Not Perform.** ☐

AUG 12 02

DEC 11



10-2 **Remove** P78-3123 electrical cable support brackets on forward and aft support fittings as follows:

1. **Remove** tethered bolt from bracket mounting hole, 80911051127-005 fitting mounting hole and wing nut.
2. **Loosen** bracket clamp at end of 8091051127-002 fitting .
3. **Remove** P78-3123 electrical cable clamp. **Route** to storage.

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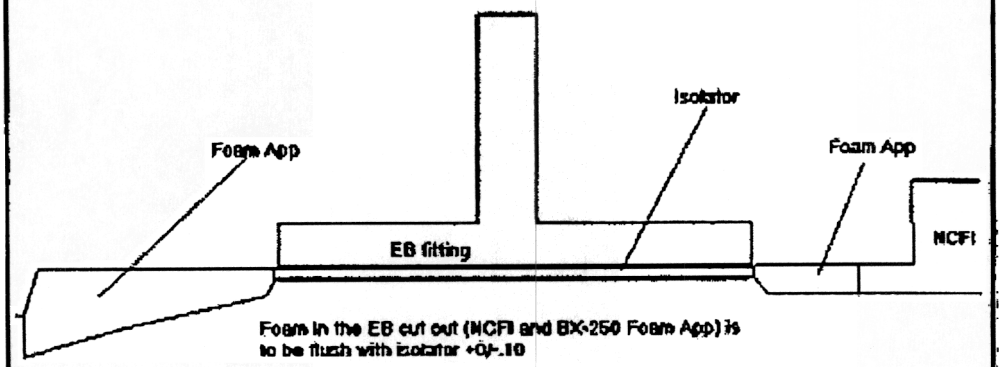
***** End of Remove P78-3123 Cable brackets *****

NOTE



Foam (BX-250) along the close-out and NCFI in the cut out are to be flush with the isolator (brown phenolic beneath EB fitting) +0/-.10 inch. Measurements shall be taken with a straight edge laying flush with the isolator.

Mapping in the steps below shall only be for defects greater than -.10 below the isolator. Ref Dwg 8097101842 2-500. (1) ME 10 8/12/02

10-3 **Map** areas which do not meet drawing allowances of flush +0/-.10 on figure 10-1. **Record** Length (Z direction), Width (X direction) and Depth (from the isolator) on Figure 10-1

T: 0396 AUG 12 '02

10-4 **Measure** the distance from the center of the EB fitting (XT 2058) to the top and the bottom of the EB fitting cut out. **Record** on Figure 10-1 Maps.

(1) Measure fwd and aft extent of EB fitting closeout boundary.

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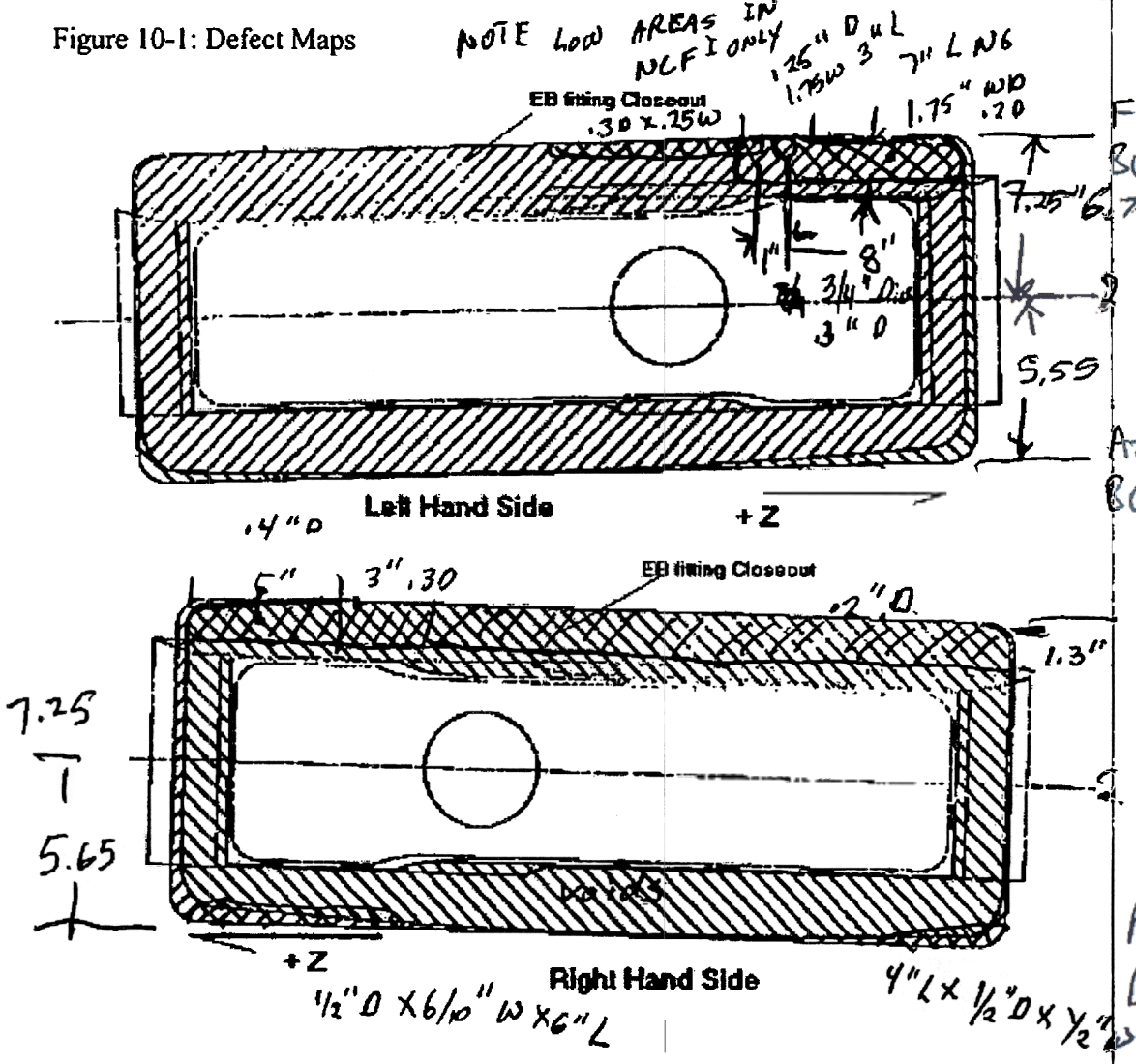
Figure 10-1: Defect Maps



*** End of Figure 10-1: Defect Maps ***

Mark Wollan 8/12/02

Robert Pierce PE-42 8-12-02

10-5 **Perform** photo documentation of areas mapped on figure 10-1.

W.O. 1-5 53883

Disc 1

STC-T09-FOAM-XXXX-T5A

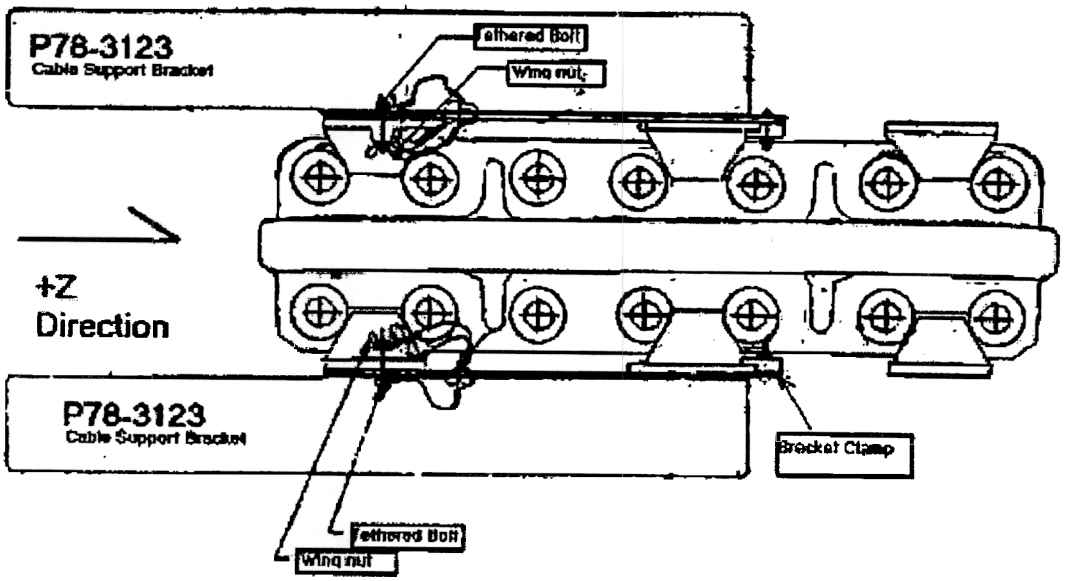
Qw:

8/12

*** End of Operation **10** ***

OPERATION 20 Electrical support bracket installation

Shop: **ET**
Cntrl Rm Console: **N/A**
OPR: **ETM**
Zone: **N/A**
Hazard (Y/N): **N**
Duration (Hrs): **1.0**



20-1 **Install** P78-3123 electrical cable support brackets on forward and aft support fittings as follows:

1. **Install** tethered bolt through bracket mounting hole, 80911051127-005 fitting mounting hole and wing nut.
2. **Tighten** till all looseness is removed.
3. **Position** bracket clamp at end of 8091051127-002 fitting with Teflon pad contacting fitting.
4. **Tighten** till all looseness is removed.

+Y Side
T: 8-23-02
-Y Side
T: 8-23-02

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20-2 **Attach** cables to P78-3123 brackets using ty-wraps.

T: 8-23-02

*** End of Operation 20 ***

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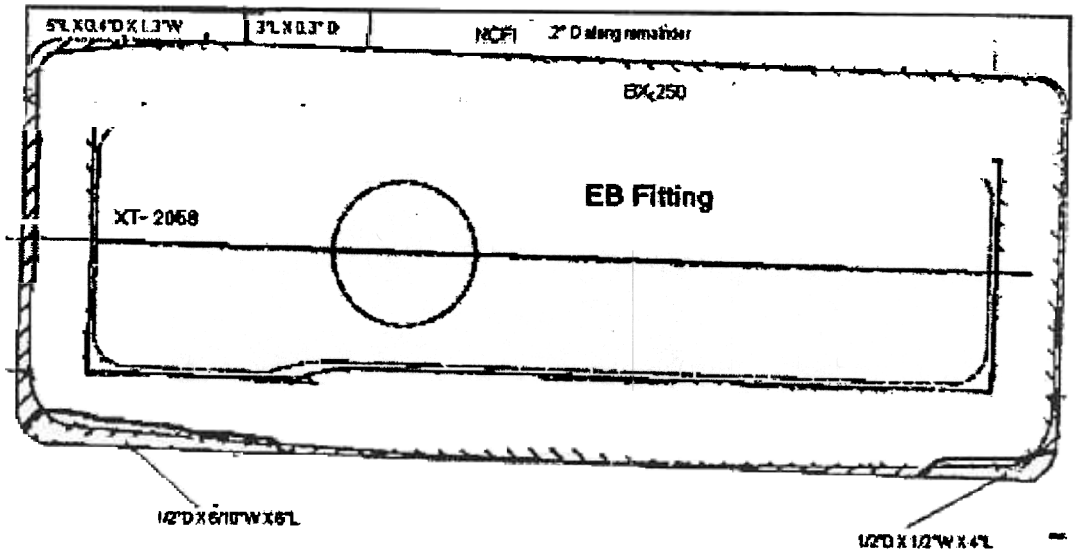
OPERATION 30 MRB

Shop: **ET**
Cntrl Rm Console: **NONE**
OPR: **ETM**
Zone: **None**
Hazard (Y/N): **N**
Duration (Hrs): **1.0**

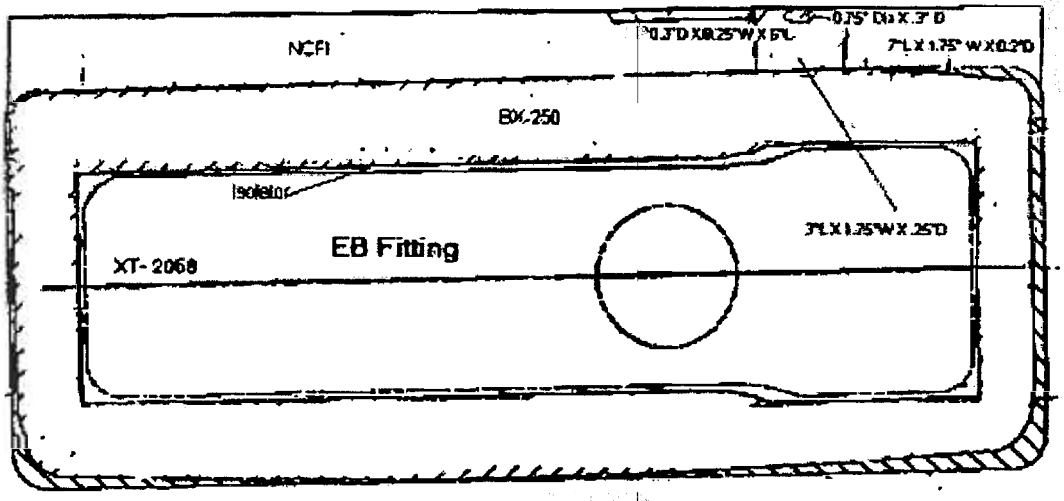
+Y Side



***** End of +Y Side *****

QE 188 JPC 8/23/02

-Y Side



*** End of -Y Side ***

Interim Summary

None of the defects meet 80901019010 in-process rework allowances for areas adjacent to a scheduled close-out in that they are greater than 4 inches long and are greater than 25% of the close-out boundary. It should be noted that the defects extend to their deepest at the +Z ends (.3 in below min dwg for +Y side and .2 in below in dwg for -Y side). The ends of the cut out (+Z and -Z) are where the NCFI is the thickest.

~~The following dispo shall repair the PD 1.0 conditions with the scheduled close-out of the (ET-93-TS-0008 and T1297.002). This shall require MR action since the areas are outside 80901019010 allowances.~~ ①

*** End of Interim Summary ***

① VR KAE Richards 8-14-02

QE 188 JPC 9/23/02

8/19/02 12:05:57 PM Official PR [illegible]-0009

MRB ACTION REQUESTED - UNRESTRICTED "USE AS ~~REPAIRED~~ AS IS"

Ref. Item # _1.0_

Reference PD item 1.0, there were several over trims noted on the ET/SRB fitting cut out. None of the defects meet 80901019010 in-process rework allowances for areas adjacent to a scheduled close-out in that they are greater than 4 inches long and are greater than 25% of the close-out boundary.

MR action is requested to accept the close-out of the PD 1.0 NCFI over trims for use as is. Acceptance of this condition is based on the following rationale:

Rationale:

Sufficient NCFI remains to maintain temps within structural limits

Low areas are within the envelope of the fairing/closeout

Close-out application performed per the following details (OMI T1297.002) shall encapsulate the PD 1.0 low areas providing additional thermal protection.

- Construct molds per standard procedures (reference OMI T1297.002)
- Vent molds at the center.
- Inject 50cc of foam at the -Z end and at the +Z end.
- Allow excess foam to vent out the center.

This MR action does not invalidate the basis for certification.

This MR action does not impact the Critical Items List (CIL) retention rationale or hazard controls.

Safety, fit or function have not been compromised.

MR Part marking required. Yes [ ], No [X].

QE 188 JPC 8/23/02 Richards 8-23-02 *** End of Operation 30 ***

QE 188 JPC 8/23/02

OPERATION 40 Summary/ Closure

Shop: **ET**
Cntrl Rm Console: **NONE**
OPR: **ETM**
Zone: **None**
Hazard (Y/N): **N**
Duration (Hrs): **1.0**

Summary/ Conclusion

Ref. Item 1.0, the NCFI on the aft dome was trimmed beyond the drawing allowances. This was evaluated and was found to exceed the 80901019010 allowances for repair of an area adjacent to a scheduled close-out (.75 inch beyond boundary by 4 inches long).

MR action to accept the close-out of the PD 1.0 NCFI over trims for use as is was processed with the following caveat to mitigate the net effect of the low foam.

Foam was applied to the scheduled periphery at either end of the close-out (where the cut-outs were the deepest) instead of in the center to provide for the most foam where needed. This afforded the greatest protection over the low foam areas.

No further rework required

RC action is requested from ET/SRB ops to instruct technician when trimming around NCFI to not smooth or blend chip outs or irregularities. Further ops is to instruct technicians that NCFI (tank barrel foam) is a very fragile foam and can easily be chipped or torn. This instruction may be accomplished via tailgates. This must be completed by 01/07/03.

Cause: Though this was an unfamiliar task which has only been performed a handful of times in the life of the program, due caution was not exercised when performing the clean-up of the remaining PDL. This was workmanship.

***** End of Summary/ Conclusion *****

40-1 Close this PR.

Qw: DEC 11 02

*** End of Operation 40 ***

DEC 11 02